

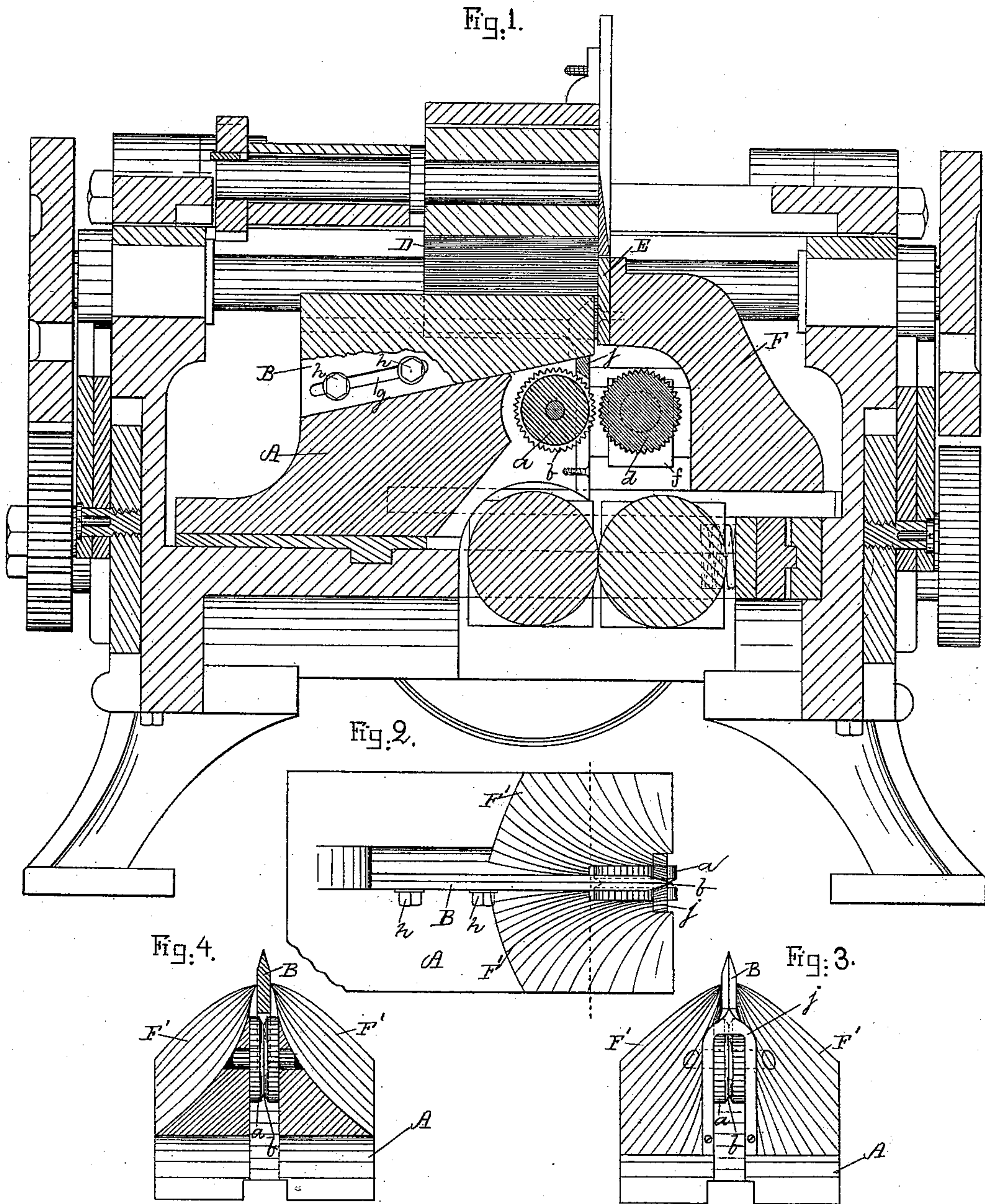
(No Model.)

3 Sheets—Sheet 1.

W. E. ADAMS.  
LEATHER SPLITTING MACHINE.

No. 362,412.

Patented May 3, 1887.



Witnesses.

Robert Wallace,  
Lauritz W. Möller.

inventor

William E. Adams  
by *Thos. A. Macleod*  
his atty



(No Model.)

3 Sheets—Sheet 2.

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Fig. 5.

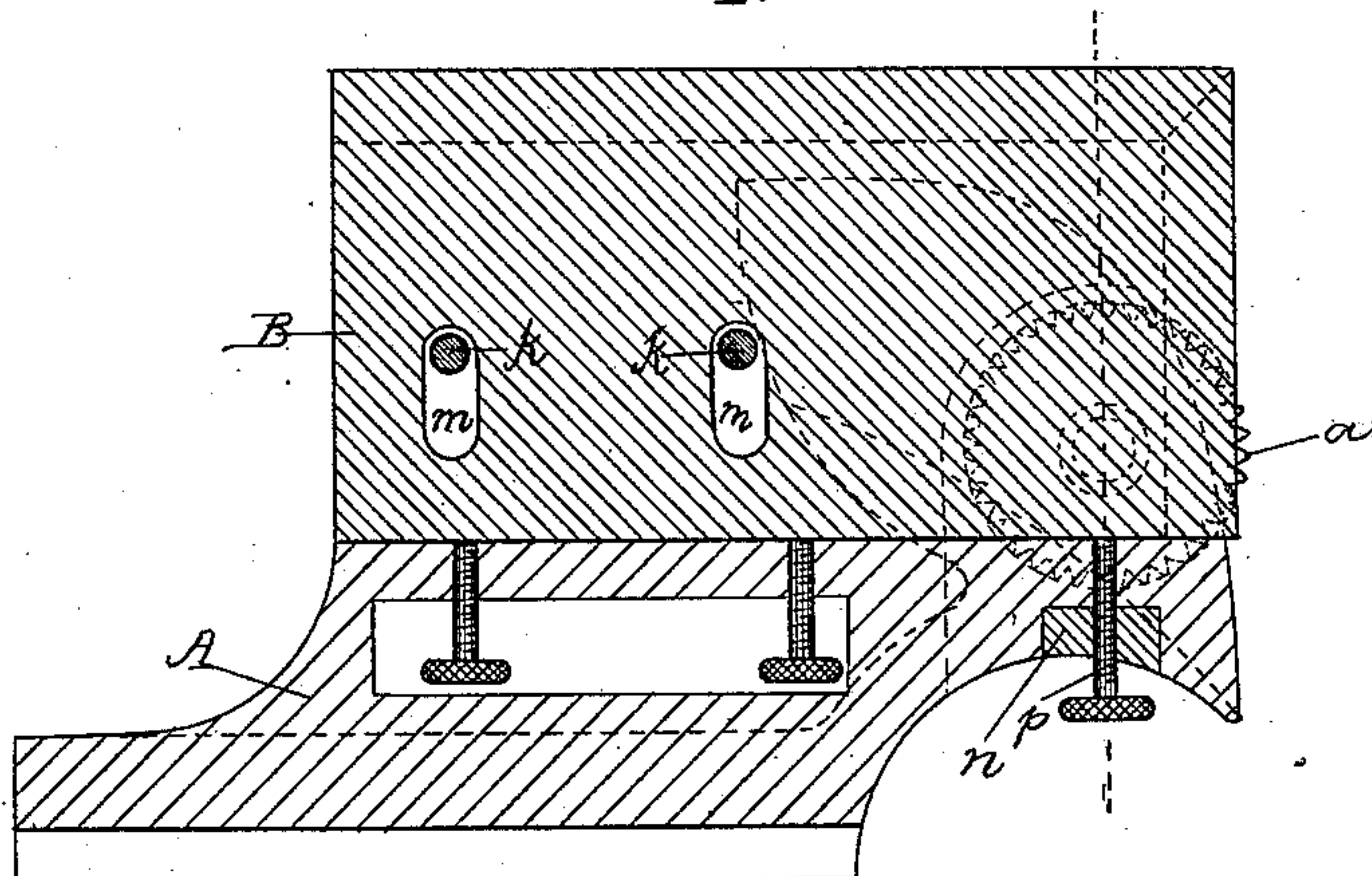


Fig. 7.

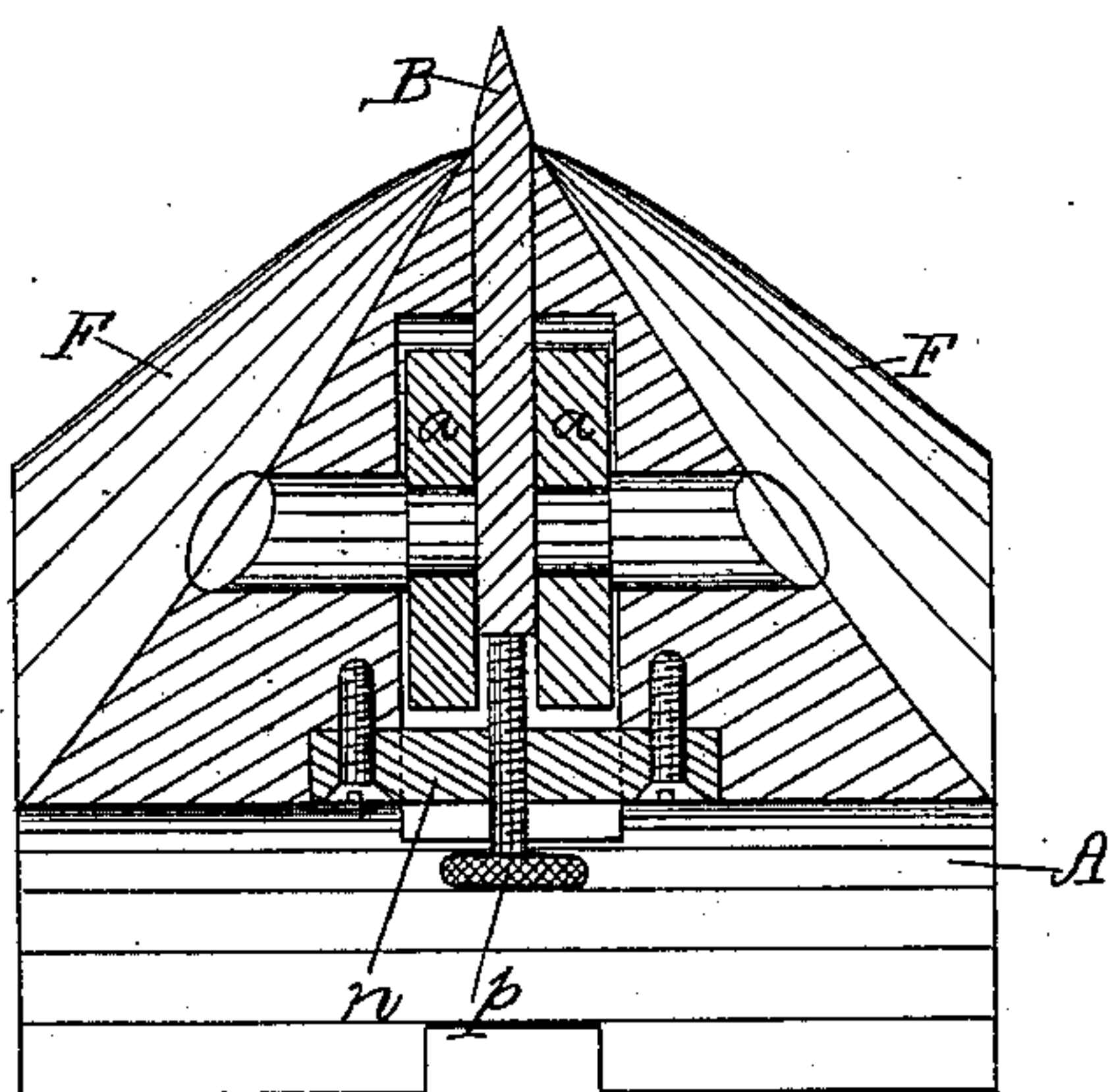


Fig. 6.

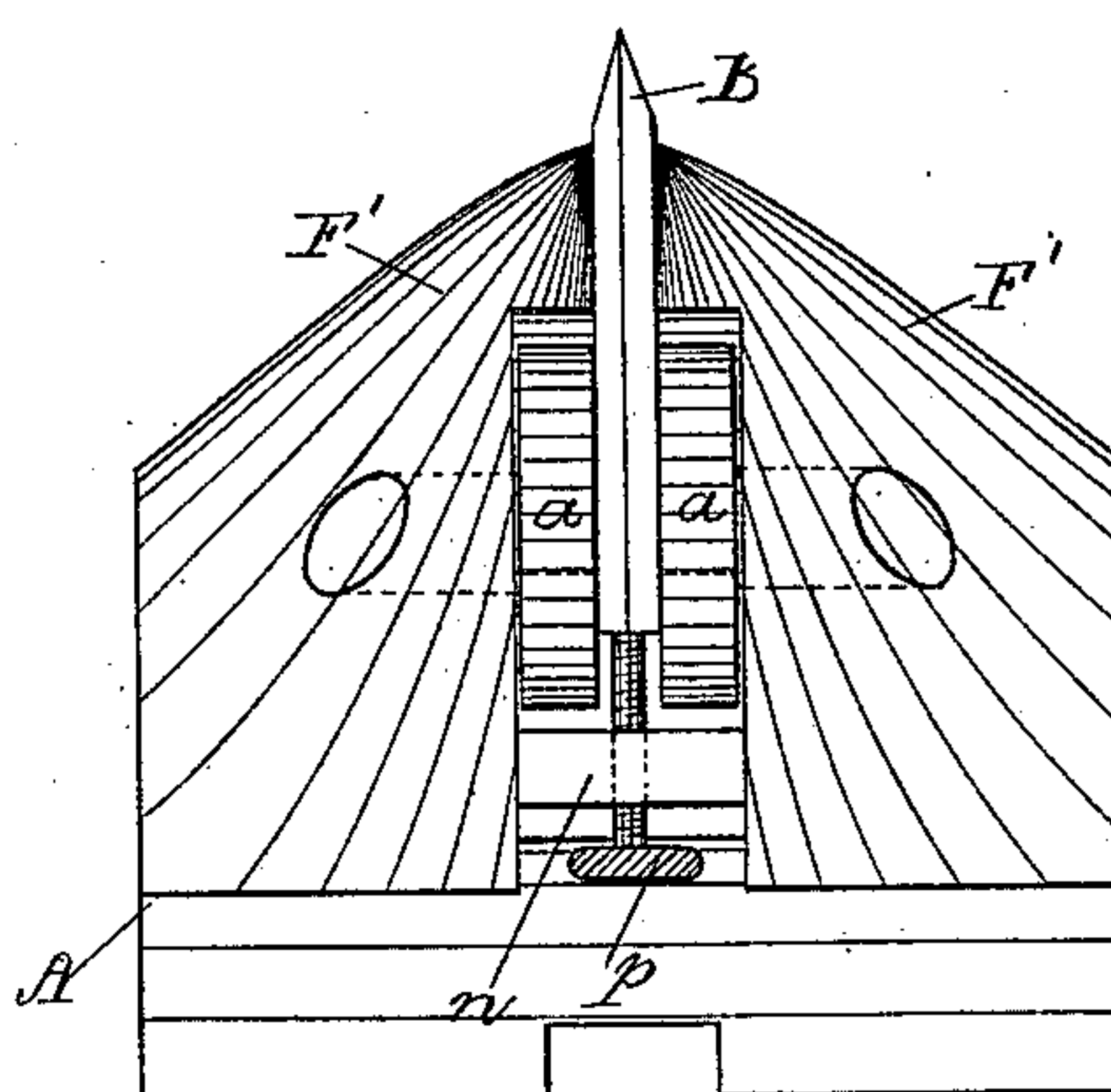
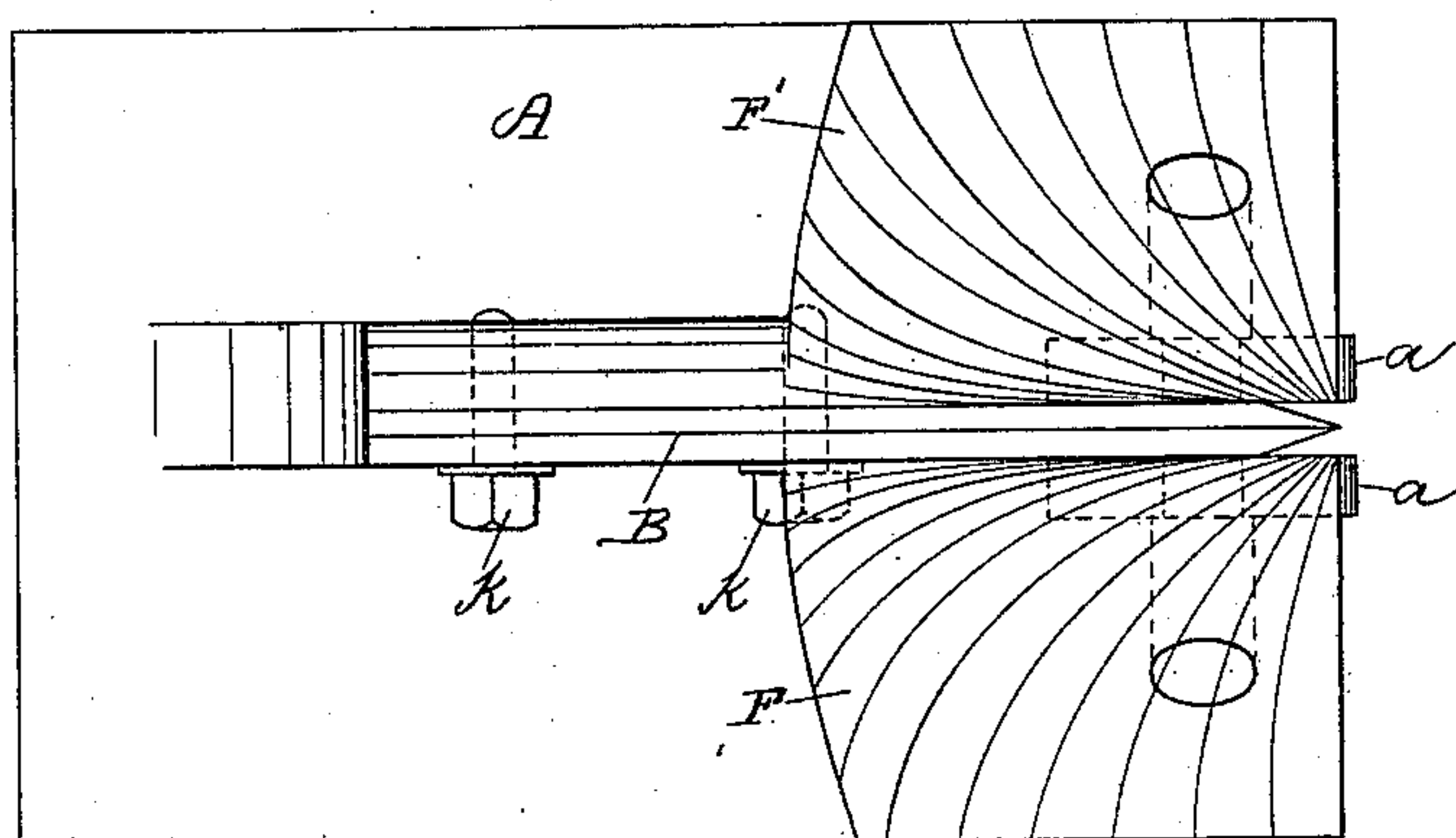


Fig. 8.



Witnesses

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(No Model.)

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W. E. ADAMS.  
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Fig. 9.

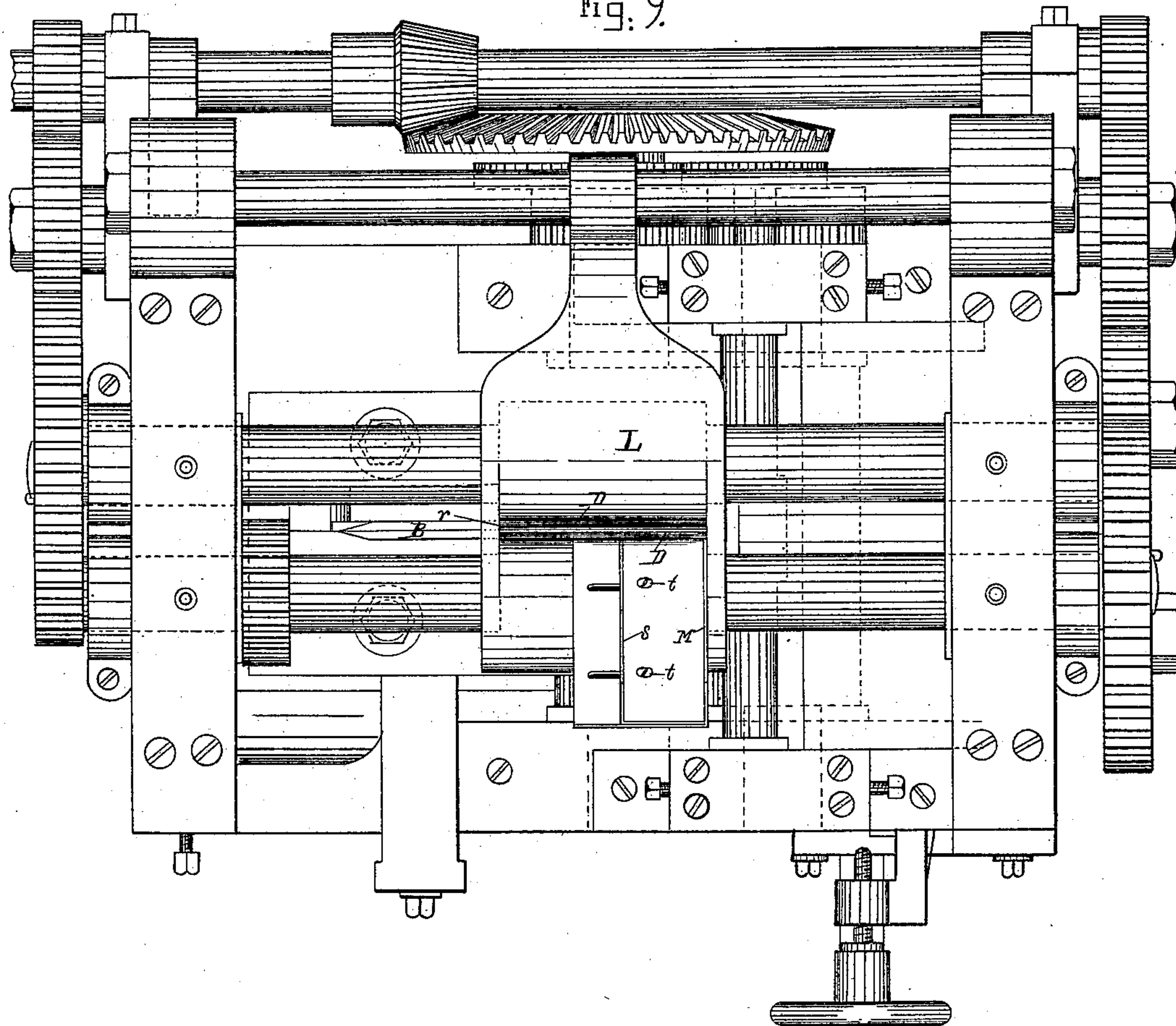


Fig. 10.

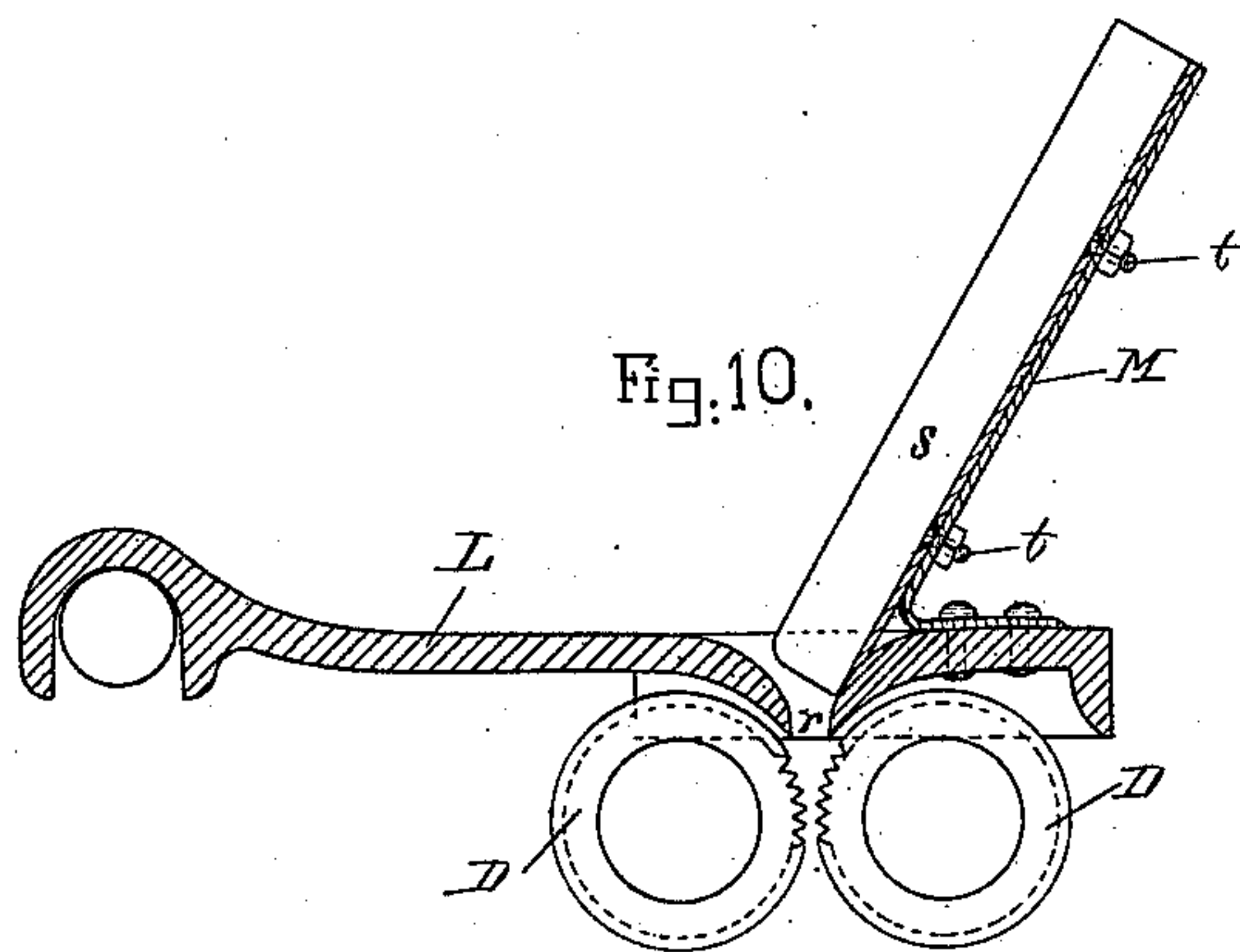
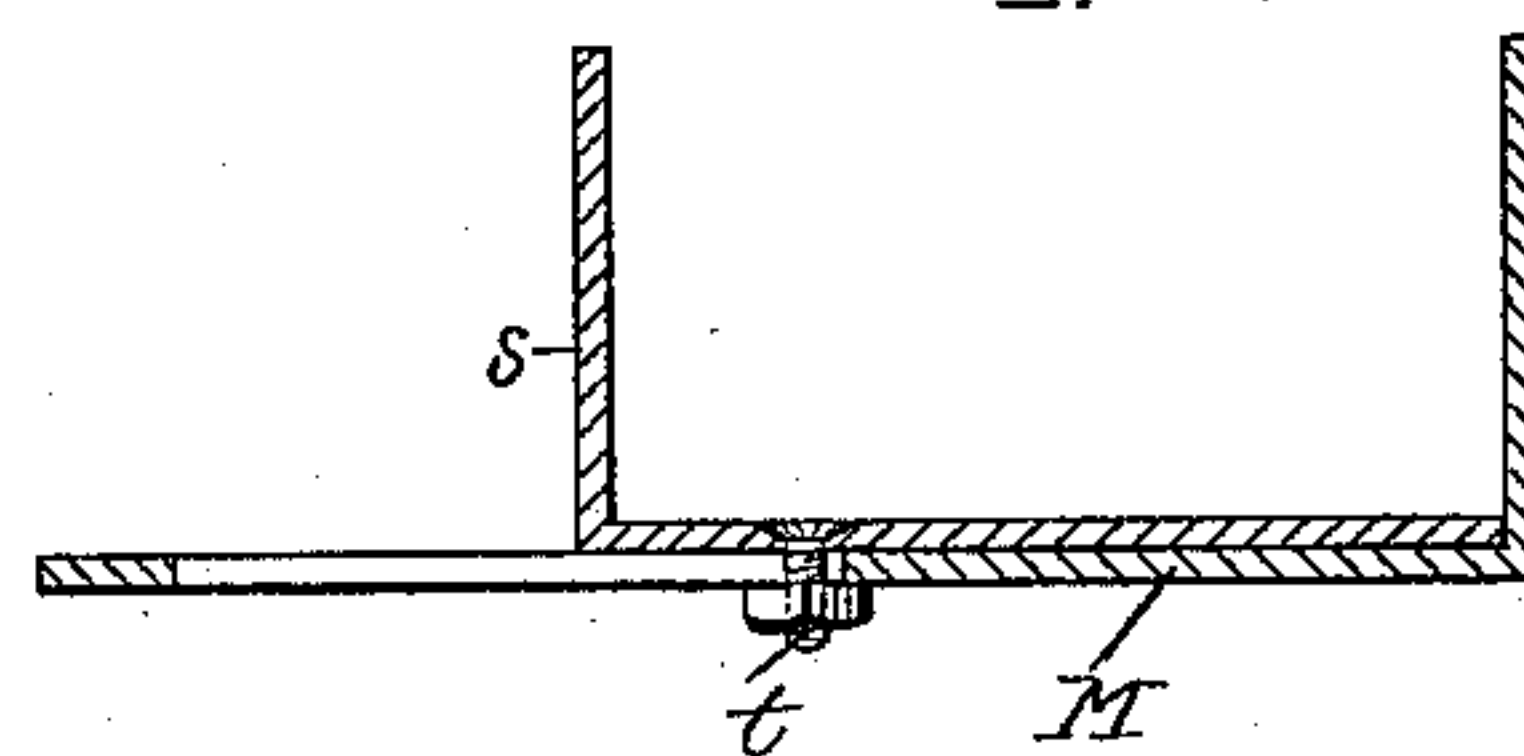


Fig. 11.



Witnesses.

Robert Wallace,  
Lairitz W. Möller

Inventor.

William E. Adams  
by Wm. A. Macleod  
his atty



# UNITED STATES PATENT OFFICE.

WILLIAM E. ADAMS, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE TYLER  
BRADFORD MACHINE COMPANY, OF KITTERY, MAINE.

## LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 362,412, dated May 3, 1887.

Application filed June 16, 1886. Serial No. 205,333. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. ADAMS, of  
Lynn, county of Essex, State of Massachusetts,  
have invented certain new and useful Improve-  
ments in Leather-Splitting Machines, of which  
the following is a specification, taken in con-  
nection with the drawings accompanying and  
forming a part hereof, in which—

Figure 1 is a longitudinal vertical section of  
my improved machine. Fig. 2 is a top view  
of the knife and its supporting-block and the  
opener and the pressing-roll. Fig. 3 is an  
end view of Fig. 2. Fig. 4 is a section on the  
dotted line, Fig. 2. Fig. 5 is a longitudinal  
section of the knife and supporting-block,  
showing the opener-roll modified, so as to en-  
able the knife to be set between the halves of  
the roll. Fig. 6 is an end view from the right  
of Fig. 5. Fig. 7 is a transverse section on  
dotted line, Fig. 5. Fig. 8 is a plan view of  
Fig. 5. Fig. 9 is a plan view of the machine  
with the cover which carries the trimming-  
knife and its feed-roll removed, and showing  
the guard-plate in position over the feed-rolls.  
Fig. 10 is a longitudinal section of the guard-  
plate and chute, showing the feed-rolls below.  
Fig. 11 is a transverse section of the chute.

My present invention is an improvement on  
the leather-splitting machine shown and de-  
scribed in my application, Serial No. 198,102,  
filed April 7, 1886; and my said present in-  
vention relates to the mechanism by which the  
piece of leather which has been split to a hinge  
at the edge is pressed into a flat sheet after  
passing the splitting-knife; and it also relates  
to a guard-plate provided with a mouth or  
opening and a slide by which pieces of stock  
of regular size, which do not require to be  
first trimmed to a straight edge, may be de-  
livered evenly to the splitting-knife.

The invention consists, chiefly, in an idler-  
roll mounted in the opener in the manner here-  
inafter described, and also in a detachable  
mouth-plate provided with a chute or slide, as  
shown and below described.

In my machine above referred to the car-  
rier-roll is opposed to the face of the opener,  
and acts to seize the leather as it passes from  
the splitting-knife and carry it or feed it along

to the presser-rolls below, which smooth and  
press it into a flat sheet.

By placing a roll in the opener and oppos-  
ing the carrier-roll to this opener-roll instead  
of to the opener itself, the feeding of the stock  
downward to the presser-rolls will not only be  
made more certain, but by providing the  
opener-roll with a groove, as hereinafter de-  
scribed, and setting the opposing carrier-roll  
sufficiently near to insure a strong pressure  
between the nip of the rolls, the leather will  
be flattened and its hinge pressed out or  
smoothed down so thoroughly that for many  
kinds of work the presser-rolls below may be  
dispensed with, and the cost of the machine,  
as also the power required to run it, will be  
thereby lessened.

I will describe my invention as it is embodied  
in the machine shown in the accompanying  
drawings, to which I will refer in the descrip-  
tion, using like letters of reference to indicate  
like parts.

As a detailed description of my improved  
machine (shown in section at Fig. 1) will be  
found in the application above referred to, I  
will confine my description to my present im-  
provements, referring only to the surrounding  
parts of the machine in so far as such reference  
is necessary to a clear understanding of my  
said improvements.

A is the knife-supporting block, which is ad-  
justably mounted on the bed of the machine,  
as described in my said application. On this  
knife-support the splitting-knife B is mounted,  
its cutting-edge projecting upward between  
the splitting-knife feed-rolls D. A guide, E,  
is mounted on a support, F, and set at a dis-  
tance from the end of the splitting-knife equal  
to the width of the leather hinge which is de-  
sired in the split piece. After the leather  
moves down past the splitting-knife the flaps  
which are formed pass on to and over the flar-  
ing sides of the opener F', which is designed  
to spread the flaps outwardly toward or into  
the same plane, thus forming a flat piece hav-  
ing twice the area of the original unsplit piece.  
In order to retain the flaps or halves of the  
leather in this flat position, it is necessary to  
press them while they are so spread, and the



pressure should be greatest at the hinge portion; in fact, for most purposes, if the piece is properly pressed at the hinge portion and the hinge well set and smoothed down while the flaps are spread, no other pressure or smoothing will be required. To accomplish this I provide an idler-roll, *a*, mounted on a shaft set in the opener, as shown, so as to bring the periphery of the roll flush with or slightly projecting beyond the face of the opener, the opener having a vertical slot cut centrally therein to accommodate the roll.

The periphery of the roll may be serrated or corrugated to give it a better grip of the stock, and in the center of the periphery I provide a recess or groove, *b*, into which, by the pressure of the opposing carrying-roll *d*, the hinge portion of the leather is forced and compressed as it passes over the opener and through the rolls *a* *d*. The idler-roll *a* is, I believe, more effective when provided with the groove *b*; but it may be used without a groove and very good results obtained. The carrier-roll *d* may also be serrated or corrugated on its periphery, and is mounted in sliding boxes *f*, which enable it to be set nearer to or farther from the roll *a*, and it is connected by gearing with the main shaft, by which it is driven, all as shown and described in my said application above referred to. In order to accommodate the knife to an opener provided with the roll *a*, I cut the shank of the knife diagonally, or at an angle with the cutting-edge, as shown in Fig. 1, and prepare the block to receive it with a corresponding bevel or diagonal, so that the end of the knife next the opener will lie above the roll *a*. As the knife is ground down it may be slid up the incline or bevel of its supporting-block, still resting thereon, and its cutting-edge adjusted relatively to the feed-rolls *D*. To allow of this being done the knife is slotted, as shown at *g*, and may be securely clamped where it is set by means of the set-screws *h*. A yoke-shaped piece, *j*, which forms a part of the opener, is secured to the front thereof and arches over the roll *a*, forming above the roll a support for the end of the knife, thus insuring its steadiness. (See Figs. 1 and 3.)

A modified form of this construction is shown in Figs. 5, 6, 7, and 8, in which a square-shank knife is used. The vertical adjustment of said knife is had by means of set-screws *k* and slots *m*, (see Fig. 5,) substantially as shown and described in my said application above referred to. The roll *a* in this case is divided into two parts and forms two rolls, mounted each on its own shaft, set in opposite sides of the opener, and separated from each other sufficiently to accommodate the knife. (See Figs. 6, 7, and 8.) The space between the rolls in this form of the device has the same function as the groove *h* in receiving the hinge of the split piece as it passes between this opener-roll and the roll *d*. For the more perfect support of the knife when these double opener-

rolls are used, I provide, instead of the yoke *j*, a cross-piece, *n*, (see Figs. 7 and 8,) secured to the opener across the roll-slot, and insert therein a set-screw, *p*, which bears on the under side of the knife, as shown, and prevents any tendency of the knife to move downward at this point. The opener and knife-supporting block may be made integral, or each may be a separate piece, as desired.

The top of the machine, where the pieces of leather are fed in, is provided with a hinged cover, fully described in my said application heretofore referred to, and which is desirable in splitting scraps or pieces of stock which require to be trimmed to a straight edge at one side before being split. When, however, the pieces to be split do not require to be so trimmed, the cover may be removed or dispensed with and a removable mouth-piece, *L*, Figs. 9 and 10, substituted. This piece may rest on the shafts of the feed-rolls, or partially on them and partially on the stationary frame, as may be found convenient. It is provided with a mouth or opening, *r*, directly over the nip of the rolls *D*, and of sufficient size to admit the pieces of leather which are to be split. The piece *L* also serves as a guard to protect the operator from the rolls. To receive pieces of regular size and deliver them to the feed-rolls through the mouth *r*, I have provided a chute or guide, *M*, which is secured to the mouth-piece or guard, and is set so as to give it pitch enough to insure the pieces of leather which may be placed in it sliding down through the mouth into the feed-rolls. One side of this chute is made adjustable, and may be set so as to accommodate any size of piece, such as half-lifts for heels or half-soles, (which when split will form whole lifts or soles,) by sliding the movable side *s* to the desired place and then clamping it in that place by means of clamping-screws *t*. (See Figs. 10 and 11.)

I do not claim in this application any of the subjects-matter which may be incidentally herein shown, but which are claimed either in my application No. 198,102, hereinbefore referred to, or in my application No. 211,894, filed August 26, 1886, my present invention embracing only the particular improvements specified by the claims hereunto appended.

What I claim is—

1. The combination, in a leather-splitting machine, of a carrying-roll, *d*, and an opener provided with an opposing roll mounted in a slot or recess in the face thereof, substantially as set forth.

2. The combination of the splitting-knife, the opener, the roll *a*, mounted therein and provided with a peripheral groove, and the opposing roll *d*, for the purposes and substantially as shown and described.

3. In a leather-splitting machine, the combination of a splitting-knife having a diagonally-shaped shank with a corresponding diagonally-shaped supporting-block, whereby, as the knife is ground, it may be moved on its



support and readjusted, substantially as set forth.

4. In a leather-splitting machine, the combination, with the feed-rolls for carrying the material to the splitting-knife, of a guard and mouth-plate covering said rolls and provided with an inclined chute, substantially as set forth.

5. In a leather-splitting machine, the com-

bination, with the feed-rolls for conveying the pieces of material to the splitting-knife, of the guard piece or plate L, provided with the mouth r, and the inclined chute M, having an adjustable side, substantially as set forth.

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Witnesses:

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